REMARKS

Amended claim 1 recites that the assembly includes a "a motion-allowing force application device," that applies a rearward force to the cycle and is controlled so as "to mimic physical effects felt by a cyclist on a stationary surface, where such effects include inertial resistance and where inertial resistance to actual fore/aft motion comprises a portion of the total apparent inertial resistance felt by an assembly user ***."

Although Radow does mention the use of a winch, there appears to be nothing in the Radow reference concerning the above cited aspect of the assembly of claim 1, in which motion is permitted and the inertial resistance to this motion comprises a portion of the total apparent inertial resistance felt by an assembly user. This is an important advancement in the art of sports simulators because the combination of actual and simulated inertial resistance is more realistic and more natural feeling than purely simulated resistance, and requires less complex control systems to achieve.

In the text surrounding the use of the term "winch", Radow describes positional constraint of the subject, regardless of their effort. In Radow's invention, the winch appears to be intended to prevent a subject from advancing along a belt surface during exercise, so as not to violate the stated principles of the design.

It is worth noting that a "winch," typically designed for pulling an object without carefully calibrated force, is not designed to permit bi-directional motion while applying a force. Such a device is not designed to "float" while winching and is well adapted to the task described by Radow, of simply constraining movement, rather than carefully simulating the forces of nature.

In the method of claim 1, motion is permitted by the use of a tether connected to a torque servo, to allow a subject full freedom and to simulate the natural forces felt by a cyclist on the road. In practice, the servo allows bi-directional motion while applying a prescribed tension to the tether, extending and retracting as the rider's output fluctuates. It in no way rigidly constrains a subject and instead simply produces a realistic feel, which encourages a natural response from the cyclist. This technology affords the cyclist complete fore/aft freedom and is essentially in constant motion during exercise, applying simulated wind loads and intermittent acceleration forces as the attached rider naturally advances or retreats along the entire belt surface. This type of careful control is not possible with a winch and as the examiner will recognize, requires the appropriate algorithms as set forth in our application.

The remaining claims are allowable at least because they are dependent on claim 1 or because they include features similar to those of claim 1. Viewing, in particular, claim 25, this claim includes a specified measure of control that is certainly not present in Radow, but is needed to simulate the natural resistance to acceleration in a natural way that is not thrown off by changing body position relative to the cycle, and yet maintains the cycle on the treadmill. This claim is supported by page 9 of the specification as filed.

Respectfully submitted,

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